



Subject card

Subject name and code	Optimization Algorithms, E:41055W0									
Field of study	Space and Satellite Technologies									
Date of commencement of studies	February 2025		Academic year of realisation of subject		2024/2025					
Education level	second-cycle studies		Subject group							
Mode of study	Full-time studies		Mode of delivery		at the university					
Year of study	1		Language of instruction		English					
Semester of study	1		ECTS credits		3.0					
Learning profile			Assessment form		assessment					
Conducting unit	Department Of Intelligent And Decision Support Systems -> Faculty Of Electrical And Control Engineering -> Wydział Politechniki Gdańskiej									
Name and surname of lecturer (lecturers)	Subject supervisor Teachers		dr inż. Tomasz Zubowicz							
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar				
	Number of study hours	30.0	0.0	30.0	0.0	0.0				
E-learning hours included: 0.0										
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		SUM				
	Number of study hours	60		0.0		60				
Subject objectives	To familiarise students theoretically and practically with the optimisation algorithms.									
Learning outcomes	Course outcome		Subject outcome		Method of verification					
	K7_W06		Student has knowledge of the typical steps and milestones in optimization problem formulation and solving.		[SW1] Assessment of factual knowledge					
	K7_U09		Student can efficiently utilize open-source libraries and tools dedicated for optimization problems to solve and illustrate the results.		[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools					
	[K7_K03] Can analyse and implement assigned tasks while maintaining high technical standards. Is able to work and interact in a group, taking on different roles. Adheres to the principles of professional ethics and respects the diversity of views and cultures.		He can implement his tasks related to optimization problems maintaining high technical standards.		[SK2] Assessment of progress of work					
Subject contents	<ul style="list-style-type: none">Principles of gradient and non-gradient optimization algorithmsMetaheuristic optimization utilizing population-based optimization modelsSolving real-life engineering problems related to space system designWorking with open-source (Python) optimization libraries									
Prerequisites and co-requisites	-									
Assessment methods and criteria	Subject passing criteria		Passing threshold		Percentage of the final grade					
	exam		50.0%		50.0%					
Recommended reading	laboratory		50.0%		50.0%					
	Basic literature		Students will receive a reading list at the beginning of the semester.							
	Supplementary literature		-							
eResources addresses		Adresy na platformie eNauczanie:								

Example issues/ example questions/ tasks being completed	-
Work placement	Not applicable

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